

Farm, Garden and Orchard Implements

Bateman & Companies, Inc.,
347 Madison Avenue
NEW YORK CITY

Manufacturers of

IRON AGE Cultivators, Potato Machinery, Sprayers, Planters, Garden Tools, etc.; CHICOPPEE LINE Plows, Corn Huskers and small farm implements; McWHORTER Fertilizer Distributors, Seed Drills and Potato Planters; WILKINSON Plows, Scrapers, Wheelbarrows, etc.; CLARK Cutaway Harrows; CURTIS "Easy-Pull" Manure Spreaders; WORCESTER-BUCKEYE Mowers; ACME Pulverizing Harrows, etc., etc.

District Sales Headquarters:
New York City;
Grenloch, N. J.; Worcester, Mass.;
Chicopee Falls, Mass.

P.M. No. A1-254-7-12

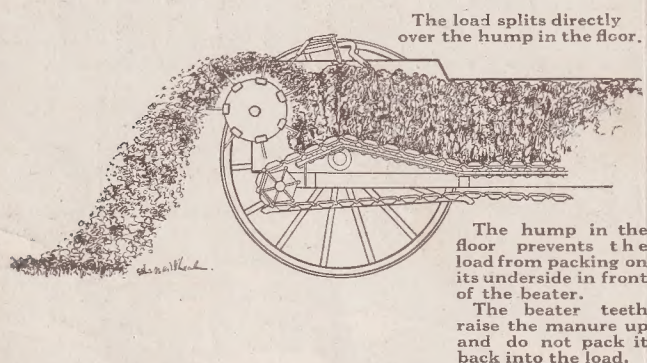
The Curtis Easy-Pull Manure Spreader



The Curtis "Easy-Pull" Manure Spreader

LOW DESIGN—LIGHT DRAFT—NON-PACKING

THE Richardson Manufacturing Company made and sold manure spreaders before any other spreader was manufactured. Many of these old spreaders are now in use, and the same company, now a division of Bateman and Companies, Inc., is to-day the only company making manure spreaders who has not begun their manufacture within a comparatively short time.



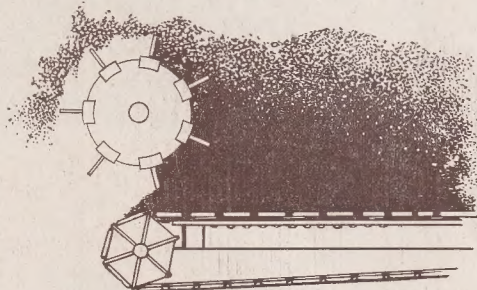
Manure spreaders have been improved, first in quality of work done, then in ease of operating and in ease of loading. The Richardson Manufacturing Company has made each step in this progress after months of experiments and tests, and each step has been made in advance of any other manufacturer.

Our latest spreader, the Curtis "Easy-Pull," reduces the draft on the horses below that of any other manure spreader, and brings it close to the ground where it is easy to load.

THE HUMP IN THE FLOOR. Previous to the introduction of the Curtis "Easy-Pull" no reduction had ever been made in the amount of power required for spreading manure. The Curtis "Easy-Pull" brings forward a new principle, tried out and tested, which successfully lightens the work of the beater (the toothed cylinder that spreads the manure) and by so doing lightens the work of the horses, eases the strain on the machine, and increases its life. To appreciate the importance of this principle it is necessary to remember that in the ordinary type of spreader more power may be used in turning the beater than in drawing the load, and that the mere carrying of the load back to the beater takes very little power. But when the beater pushes directly back against the carrier load a great amount of power is uselessly employed, and the manure tightly packed.

The basic principle of the Curtis "Easy-Pull" is a hump in the frame of the spreader, over which the floor passes. This hump is in front of the beater, and as the load of manure on the rolling floor moves backward toward the revolving beater it rolls up a gentle incline, as shown in the drawing below, then breaks over the top of this hump, and the beater catches the manure, already partly loosened, and spreads it easily. The load splits on top of the hump, and the beater teeth are not obliged to pull the manure out of the solid mass.

In the level floor type of spreader the pins on the underside of the beater become packers instead of lifters, and pack the lower half of the load against the oncoming manure.



LEVEL FLOOR TYPE SPREADER

The CURTIS "EASY-PULL"

EASY LOADING

All our thoughts in developing this sprayer have not been confined to easy draft and durability. The man who loads has been thought of, for he has to work under many different conditions and has to load in the cellar, in the yard, and in the field; he has to load over the side, over the rear, and over the front part of the spreader if necessary. The Curtis "Easy-Pull" is loaded easily from either the side, front, or rear. It is very low, less than 40 inches to pitch over the side and less than 44 inches over the rear. At the rear end the jointed end gate and pulverizer is down and out of the way when loading. There is nothing above the beater to pitch over. The drive wheels are far enough under the load so that the rear end can be backed close to a pen or pile.

HIGH WHEELS

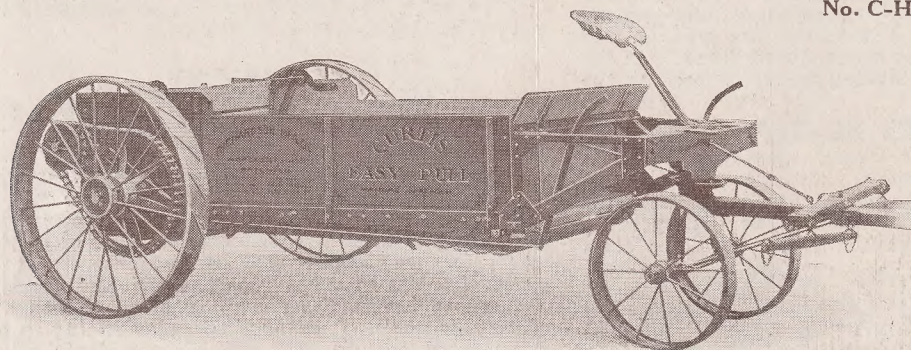
Large wheels draw easier than small wheels, regardless of the width of the tire, on soft or rough ground. The Curtis "Easy-Pull" is the only high-wheel low-built spreader with the axle under the load.

Wood wheels, with 5-inch rear and 4-inch front tires, are regularly furnished. Extra wide tires, 6-inch rear and 5-inch front, are furnished if ordered. Diameter of rear wheels 50 inches.

Steel wheels are supplied when ordered. These are of the most approved type, with lugs attached, spokes widely staggered and solidly riveted. They are 4-inch front and 5-inch rear.

AXLE ABOVE THE SILLS

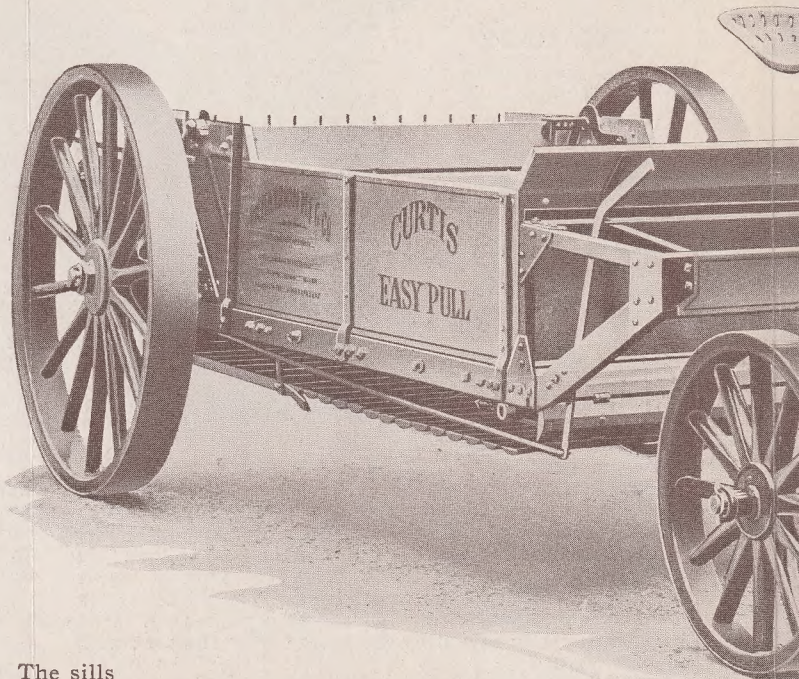
The axle is above instead of below the sills. The sills are hung from the axle by steel hangers. The body of the spreader is close to the ground and easy to load.



STEEL WHEELS OR WOOD WHEELS

THE SPREADER WITH THE HUMP THAT

You may have noticed, while watching a "load" operation, that the horses pull just as hard till the machine becomes lighter. This is caused by the compact machine. This difficulty is overcome in the Curtis "Easy-Pull" machine, while unloading, draws easier with even



No. C-H-2 MANURE SPREADER. Weight,

RETURN OR ENDLESS

This spreader is built both in return apron models. The endless apron models, in all sizes, the return apron is only.

List of Sizes

Endless Apron:—

- C-H-1, small two-horse size,
- C-H-2, medium size.....
- C-H-3, large size.....

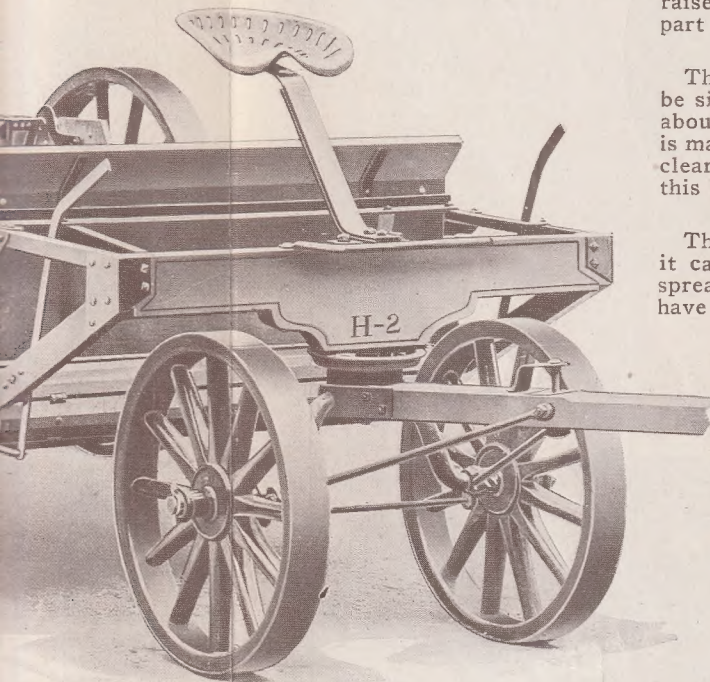
Return Apron:—

- R-H-1, small size.....

"EASY-PULL" Manure Spreader

THE HUMP THAT BREAKS THE LOAD

While watching a "level floor type" spreader in pull just as hard though the load constantly increased by the compact manure crowding against the front. Overcome in the Curtis "Easy-Pull," as this spreads easier with every step of the team.



SPREADER. Weight, 1960 lbs.

TURN OR ENDLESS APRON

The spreader is built both in endless and return apron models. The endless apron is made of two pieces, the return apron in the small size

List of Sizes

Apron:—

small two-horse size, weight	1925 lbs.
medium size.....	1960 lbs.
large size.....	2050 lbs.

Apron:—

small size.....	weight 1925 lbs.
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AXLE UNDER THE LOAD

The power to drive the machinery of a manure spreader must come from the rear wheels. These should be large, and the rear axle should take as much of the weight as possible so as to have all possible traction not to slip on heavy ground when spreading tough manure. The axle and rear wheels of this spreader are well under the load. They get plenty of traction, and being under the body of the spreader raise it over obstructions. They therefore protect the under part from injury.

SIMPLICITY

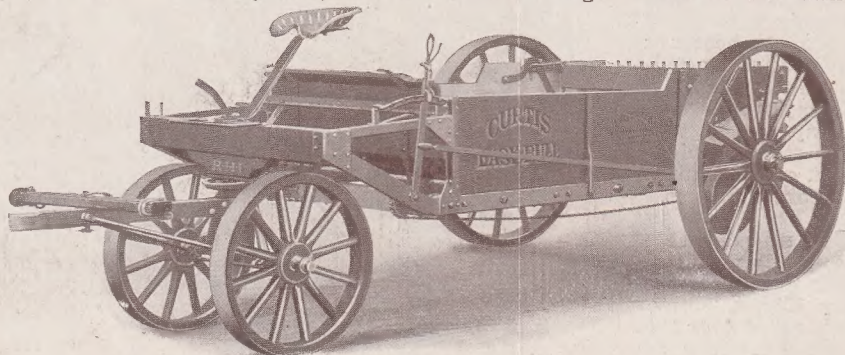
This spreader has very few parts. A manure spreader must be simple to be properly cared for, for no man will bother about an adjustment that is not plain. Every part therefore is made as simple as possible, and every adjustment perfectly clear. Anyone who can drive a team is competent to use this spreader.

STRENGTH

The Curtis "Easy-Pull" Spreader is strong and durable as it can be made; steel enters much into its making. This spreader is built so strong that many thousands of loads have never warped or twisted a body in any way.

SIMPLEX BEATER DRIVE

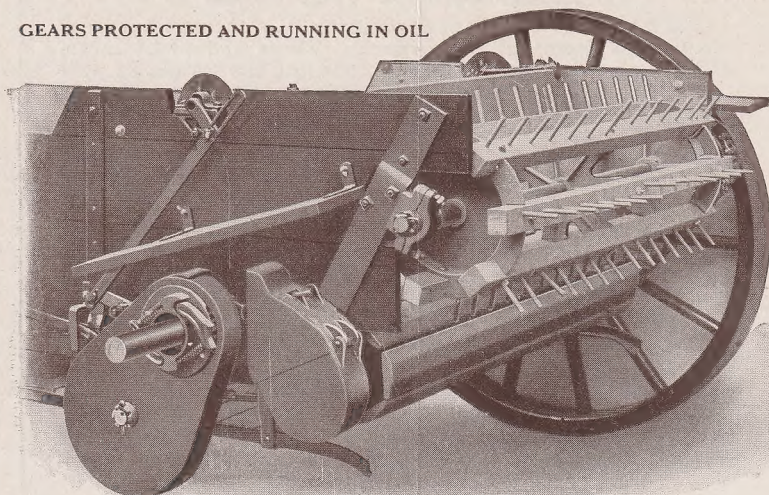
This drive transmits power from the main axle to the beater shaft, turning the beater at a higher speed than the main axle and in the opposite direction. The patented Simplex Drive does away with all gears and stud shafts attached to the frame of the spreader. A heavy pintle chain runs over the beater shaft and over the sprocket on the main axle. The direction of the motion of the beater is reversed in a gear-case tightly inclosed, attached to the beater shaft itself. This is in no way affected by the rocking of the beater on its ball-and-socket bearings, and this gearing cannot become filled with manure. There are no stud shafts to get out of line. In short, there is no binding, hard draft or breakage. It is simplicity itself, always allowing free motion of the beater shaft and preventing cramping of the gears. This drive has been used for a number of years on the Worcester-Kemp and then on the Curtis "Easy-Pull," and a case of breakage is thus far unknown.



RETURN APRON MODEL

THE SPREADER WITH THE HUMP THAT BREAKS THE LOAD

GEARS PROTECTED AND RUNNING IN OIL



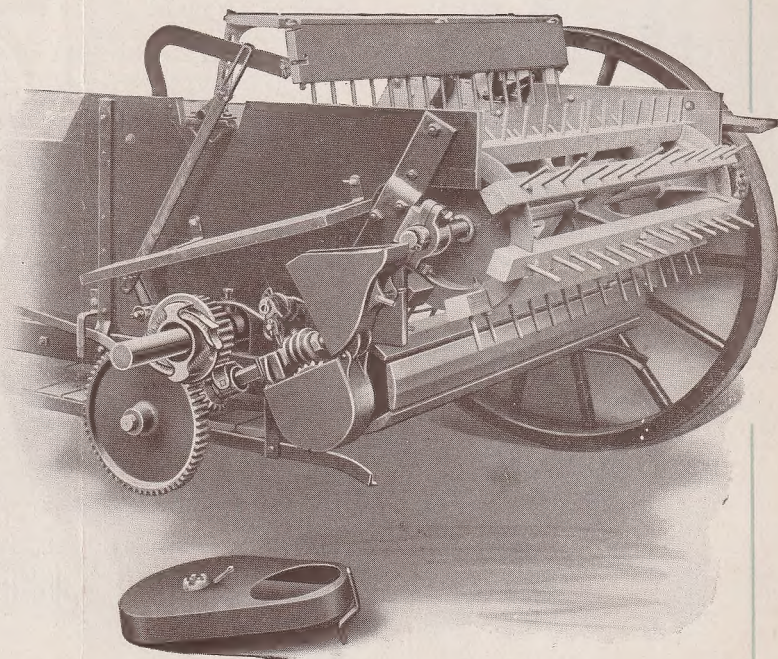
POSITIVE FLOOR FEED

The positive floor feed of the Curtis "Easy-Pull" regulates the exact amount that is to be spread. It does not get out of order. It is perfectly quiet, and should it by reason of long wear need adjustment, this is easily and quickly made. This gearing is simple; it consists of two pairs of strong gears incased so as to be protected from

dirt, and a worm and worm wheel running in a bath of oil. There can be no slipping of the gears, and the spread is the same uphill or downhill. The number of loads per acre is regulated by the driver by a lever at his seat, and is changed instantly by moving this lever and without stopping the team. This floor feed was used on the Worcester-Kemp for many years and has passed the experimental stage. It is stronger, surer, and longer wearing than any other form of manure spreader floor feed.

PULVERIZER

When raised the jointed end gate and pulverizing rake holds itself over the beater at the right angle to pulverize lumps. This is self-adjusting, and when any foreign material, a stone or piece of wood, comes against it, it is forced back, allowing the foreign piece to pass over. This end gate is down out of the way while loading, and the Curtis "Easy-Pull" is loaded over the rear end as easily as over the side.



POSITIVE GEAR FEED THAT CANNOT SLIP

THE SPREADER WITH THE HUMP THAT BREAKS THE LOAD

No pulverizer to prevent loading over the rear end. When loading, end gate is down; when spreading, end gate is raised and acts as a pulverizer.

END GATE

For good work to be done, an end gate on a manure spreader is necessary, for by this the manure is held away from the beater while the beater is given a free and easy start when the spreader is put into operation. The beater attains full speed before the manure comes against it, insuring a good even spread from the beginning. The end gate makes a tight box of the spreader, so that manure is not scattered over the road in going to the field. The patented end gate of the Curtis "Easy-Pull" is jointed, and moves away from the manure as it raises, so that it can never bind. The joint allows it to move away from the load as it comes up. It is always easily raised by the driver from his seat with one hand.

DOUBLE SPIRAL BEATER

The beater teeth are arranged in a double spiral working each way from the center of the load. A load of manure packs heaviest in the middle, and this arrangement of the beater teeth distributes the load toward the sides, leaving an even spread on the ground.

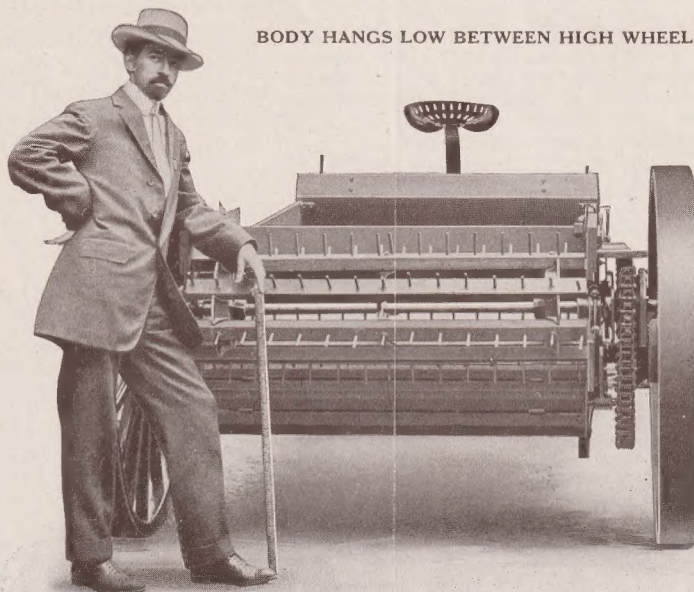
BALL-AND-SOCKET BEATER BEARINGS

The Simplex Beater Drive, using a chain from the main axle to the beater shaft, allows the use of ball-and-socket bearings on the beater, so that with the rocking or possible twisting of the spreader frame over rough ground, the beater can never bind.

PROTECTION AND LUBRICATION

All working parts are shielded from dirt and from injury. All fast moving gears are incased in an oil bath. Lubrication of the main bearings is provided for by prominent oil tubes running to the center of the bearing. There is no trouble in keeping this spreader properly lubricated.

BODY HANGS LOW BETWEEN HIGH WHEELS



LOW DOWN

Wheels are not in the way of loading and are out of the way of the manure when spreading.

CHANGE OF FEED

The Curtis "Easy-Pull" as regularly equipped has four feeds—5, 10, 15, and 20 loads to the acre. The change of feed handle at the driver's left in the notch farthest front spreads 5 loads per acre; in the second, 10 loads; in the third, 15 loads; in the fourth, 20

loads. The fifth notch, or one farthest back, spreads nothing, and is used in moving from one part of the field to the other without spreading or in passing through a swale where no manure is wanted.

If a heavier spread than 20 loads per acre should be required, extra feed gears can be supplied that spread as high as 40 loads to the acre. With these gears in the first notch it spreads 10 loads per acre; in the second, 20; in the third, 30; and in the fourth, 40, the last notch spreading nothing.

Also extra fine feed gears can be furnished that spread as low as $2\frac{1}{2}$ loads per acre.

EQUIPMENT

With the spreader is supplied whiffletrees, neck yoke, complete set of tools, and mud lugs for icy or muddy soil.

No machine is superior by reason of any one point, however far in advance that feature may be, unless the machine is well balanced and every part supports the whole. A manure spreader combining every feature that the past has demonstrated to be good, that has been built long enough and carefully enough to insure the necessary strength and simplicity, is good. A manure spreader adding to this a patented feature that reduces the draft of the horses, that makes a low-type spreader with the axle under the load between high wheels, is a profitable machine to buy. This is the Curtis "Easy-Pull."